NOAA Unmanned Aircraft Systems (UAS) WG Meeting Minutes

November 30, 2005

(Prepared by Sara Summers, NOAA/OAR)

The monthly UAS WG telecon was held on November 30, 2005 from 1:00-2:00 EST.

The following WG members participated in the call:

- CDR Harris Halverson - NMAO
- Sara Summers – OAR/ESRL
- Joe Cione - OAR/HRD
- Todd Jacobs - NOS
- CDR Todd Stiles - PP&I
- Ron Dobosy - ARL
- Dr. Richard Merrick - NMFS
- John Reghi – Office of Law Enforcement
- Dr. James Elkins – OAR/ESRL

1. CDR Halverson explained that there is some confusion at HQ regarding the lead individual for the UAS effort. CDR Halverson was appointed the UAS Project Manager in response to a directive from VADM Lautenbacher to RADM De Bow and RADM Behn for the lead to be in NMAO where NOAA's fleet resides. Dr. Marty Ralph, the Program Manager for NOAA's Science, Technology and Infusion Program was designated the UAS Project Manager in a memorandum from Frank Kelly to Bonnie Moorehouse and Mary Glackin. There was a meeting earlier today with Bonnie, Mary, RADM Behn, Dr. Alexander MacDonald and Dr. Marty Ralph to resolve the issue.

2. The UAS Senate Report is in process. CDR Halverson thanked everyone for submitting their sections of the report. We have had discussions with NASA (NOAA and NASA were directed to consult with one another). Everyone's input has been incorporated into the document which has undergone one review by RADM Behn, who recommended cutting the document down in size. CDR Halverson and Sara Summers are editing the document, which will be forwarded later this week to Danielle Swallow, and Legal Counsel for the next stage in the review process.

3. The Access 5 Spring '06 Hawaii project is on hold until further notice. NASA is terminating the Access 5 program, following their decision to no longer fund private industry. SC 203 is responsible for developing a set of recommendations for the FAA for UAS to access the NAS. Randy Tebeest will attend the next SC 203 meeting.

4. The NOAA/NASA Altair demonstration was successfully completed earlier this month with two flights; an 18.4 hour flight that demonstrated the Altair's long endurance in support of "dull, dirty and dangerous" missions which manned vehicles are unable to fly. This flight fell short of the targeted 20 hours due to a perceived fuel problem that

was in fact due to a heating switch that was not turned on, and the fuel was cold. The plane otherwise performed well, as did the instruments.
Todd Jacobs reported that the second flight, a 7.7 hour flight over the Channel Islands went well. The streaming video was made available on line during flight; the digital camera operated well; the skyball (EO/IR) was not ideal because we were using an older model, a 14 inch skyball that was now obsolete. The 14 inch skyball is not optimum for high altitude flights. When the plane flew at lower altitudes (7K feet) we were able to identify several vessels by type and activity, and could confirm their lat/long position. We learned that it is easier to identify a moving target as opposed to an anchored target, because the plane doesn't pass over it as quickly. For future high altitude flights we would like to use the 20 inch skyball - it has gyro stabilization and can auto-lock onto a target. We could not have used it for these flights, however, because there was not enough room with the NOAA payload. GA-ASI said they would arrange for us to observe one of their flights with a 20 inch EO/IR.
Dr. Elkins reported that his goals were met (Gas Chromatograph and Ozone sensor). He got data on both flights, and observed polar stratospheric air. Jim is planning to give a paper at the AGU meeting next week about the tropopause fold that he observed on the April 19 flight.

5. The NOAA web site is complete; please take a look at it if you have not yet had a chance to.

6. Todd Jacobs reported that the Silver Fox UAS demo in Hawaii will have support even though the NMSP had a 30% budget cut. No dates for the demo have been set yet, but they plan to meet in Hawaii in the near future to look at proposed sites around Kauai. Todd should know by the next meeting whether or not the funding is definite.

7. Ron Dobosy reported that the Sierra UAS project is still in its beginning stages. There is currently no funding to put instruments on the plane, and they are trying to come up with something for '06 -'07. They are looking for inexpensive ways to get the program going.

8. Dr. Bill Lehr, NOS, Office of Response and Restoration, was not on the call to report about the "Safe Seas 2006" exercise. Todd Jacobs said that due to the current budget clime, it is not clear if it will happen this year.

9. Joe Cione, HRD said they have requested $250K for '06 for a 4-5 week Aerosonde field deployment. The request is still pending. At this point there is no budget for follow-up activities to Ophelia, but they are hoping for support.

10. Test flights of Aerosonde out of Guam were completed last week; a total of 290 hours were flown, which was short of the 300 hours funded. (See Mark Weadon's report attached to these notes). There was discussion regarding the Aerosonde's limited ability with respect to hurricane surveillance, the aircraft only flies to 12,000 feet and does not have a broad enough range to go around a storm – so either a fleet would be needed, or an Aerosonde should be used in conjunction with a larger plane such as a Global Hawk.

11. CDR Halverson reported that Joe Del Frate has replaced Chris Naftel as the NASA Global Hawk lead. NASA is still planning to acquire Global Hawk Air Vehicles One (AV-1), AV-2, and AV-3 by the summer of '06. They are working with Raytheon on a ground-based station. Since NASA is also planning to acquire a Predator B (and possibly the Altair) they are discussing the possibilities of developing ground station that will accommodate both vehicles.

12. NOAA has an opportunity to participate in NASA's FIRE mission with the U.S. Forest Service July/Aug '06 using the Altair. The mission is planning to use a centerline pod (that will also be able to be mounted on Predator B wing hard points), and the internal payload area will be available. Jim Elkins is interested in putting his Altair instrument on board, but might make some minor modifications to add a water vapor channel and to improve ozone measurements.

12. CDR Halverson announced that LCDR Randy TeBeest, from NOAA's Aircraft Operations Center will be assuming Harris' duties in January 2006.

13. There will be no telecom in December. The next WG telecon will be January 18, 2006, at 13:00 EST.

Status of Weather Scout UAV Demonstration in WESTPAC
Colonel Mark Weadon

Summary

- Test flights of Aerosonde out of Guam completed last week; a total of 290 hours flown (short of the 300 hours funded).

- No tropical cyclones moved close enough to Guam to offer a chance for a T.C. penetration by the Aerosonde.

- Most flights were long duration synoptic missions, with occasional invests of suspicious regions of convection.

- One UAV was lost when it ran short of fuel and splashed down several miles short of landing; aircraft had encountered heavier-than-anticipated headwinds on return leg.

Initial Assessment

- Data feeds worked well; all met data from Aerosonde was forwarded in via SATCOM link to AF Weather Agency, from there to the Joint Typhoon Warning Center in Hawaii.

- Aircraft performed less capably than manufacturer had advertised; could not reach required ceilings except when nearly empty of fuel.

- Lack of transponder on the UAV required employment of a chase aircraft; small UAV proved difficult to locate visually from the chase plane.

- Final test report will not be releasable until Mar 06, but program director expects it will not endorse the Aerosonde for T.C. reconnaissance in WESTPAC.

- On the plus side, the test did show, repeatedly, wide gaps between model-derived winds and actual wind data gathered by the Aerosonde, clearly demonstrating the utility of UAVs in data-sparse oceanic regions.

- The Outlook: if funding can be lined up in 06/07, either through AF channels, or from a congressional plus-up, further testing will be undertaken; program director plans to expand the next RFP to take full advantage of a very dynamic UAV industry to identify a more capable air platform for this type of weather reconnaissance. Initial test has been a learning experience.